

Notice of Allowability

Application No.

10/083,812

Examiner

Etienne P LeRoux

Applicant(s)

INDYK ET AL.

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Request for Reconsideration of 12/10/2004.
2. ☒ The allowed claim(s) is/are 1-40.
3. ☒ The drawings filed on 27 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


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TECHNOLOGY CENTER 2100

Claim Status

Claims 1-40 are pending. Claims 1-40 are allowable as detailed below.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Instant invention drawn to a method for automatic pattern matching is allowable for including the following nonobvious improvement over the prior art of record, in conjunction with the remaining claim limitations:

selecting the generated vector corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

IN THE CLAIMS:

1. A computer-implemented pattern-matching method comprising, from a data set:
 - generating vectors from a plurality of partitions of the data set;
 - reducing each generated vector to a lower dimensional vector;
 - for each lower dimensional vector, summing distances between the lower dimensional vector and remaining lower dimensional vectors, and
 - selecting the generated vector corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set.
12. A computer-implemented pattern-matching method comprising, for a data set:
 - generating vectors from a plurality of partitions of the data set;
 - reducing each generated vector to a first lower dimensional vector and a second lower dimensional vector,
 - adding each first lower dimensional vector and the corresponding second lower dimensional vector to produce third lower dimensional vectors, wherein the third lower dimensional vectors represent fourth vectors with higher dimensionality than the generated vectors,
 - for each third lower dimensional vector, summing distances between the third lower dimensional vector and remaining third lower dimensional vectors, and
 - selecting one of the fourth vectors corresponding to the third lower dimensional vector having a lowest summed distance as representative of the

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data set.

15. A computer-implemented pattern-matching method comprising, from a data set:

generating vectors from a plurality of partitions of the data set;

reducing each generated vector to a first lower dimensional vector,

for each first lower dimensional vector, summing distances between the first lower dimensional vector and remaining first lower dimensional vectors;

if a lowest summed distance exceeds a predetermined threshold:

adding each first lower dimensional vector to a corresponding second lower dimensional vector to produce third lower dimensional vectors, wherein the third lower dimensional vectors represent fourth vectors with higher dimensionality than the generated vectors, and

for each third lower dimensional vector, summing distances between the third lower dimensional vector and remaining third lower dimensional vectors, and

selecting the generated vector corresponding to the first lower dimensional vector having the lowest summed distance or one of the fourth vectors corresponding to the third lower dimensional vector having the lowest summed distance as representative of the data set.

21. A computer-implemented method of identifying a representative trend in data, comprising:

a) partitioning the data into a plurality of vectors having a predetermined dimension,

b) reducing the plurality of vectors to a corresponding plurality of lower dimensional vectors,

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c) for each one of the lower dimensional vectors, summing distances between the one lower dimensional vector and remaining lower dimensional vectors,

d) selecting one of the plurality of vectors corresponding to the lower dimensional vector having a lowest summed distance,

e) if the lowest summed distance exceeds a predetermined threshold, adding each of the lower dimensional vectors with a corresponding one of another plurality of lower dimensional vectors to produce a third plurality of lower dimensional vectors, wherein the third plurality corresponds to another plurality of vectors having higher dimensionality than the plurality of vectors, and repeating c) and d) for the another plurality of vectors and the corresponding third plurality of lower dimensional vectors, and

f) identifying the predetermined dimension of the selected one of the plurality of vectors as a period of the data and the selected one of the plurality of vectors as the representative trend of the data.

23. A computer system, comprising:

means for partitioning a data set into a plurality of vectors,

means for reducing the plurality of vectors to a corresponding plurality of lower dimensional vectors;

for each one of the lower dimensional vectors, means for summing distances between the one lower dimensional vector and remaining lower dimensional vectors; and

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means for selecting one of the plurality of vectors corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set.

27. A computer system, comprising:

means for generating vectors from a plurality of partitions of a data set;

means for reducing each generated vector to a first lower dimensional vector and a second lower dimensional vector,

means for adding each first lower dimensional vector and the corresponding second lower dimensional vector to produce third lower dimensional vectors, wherein the third lower dimensional vectors represent fourth vectors with higher dimensionality than the generated vectors,

for each third lower dimensional vector, means for summing distances between the third lower dimensional vector and remaining third lower dimensional vectors, and

means for selecting one of the fourth vectors corresponding to the third lower dimensional vector having a lowest summed distance as representative of the data set.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Thomas M Isaacson on March 3, 2005.

Conclusion

The prior art of record and not relied upon is considered pertinent to applicant's disclosure: US Pat No 5,933,806 issued to Beyerlein et al discloses a method for recognizing a method for recognizing a pattern in a time-sequential input data such as speech.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

3/3/2005


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